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10/721,511	11/26/2003	Mauri Saksio	60279.00071	6152

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EXAMINER
LOO, JUVENA W

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>26 November 2003</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-12</u> is/are pending in the application.
  4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-4 and 6-12</u> is/are rejected.
7)☒ Claim(s) <u>5</u> is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>26 November 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  a)☒ All b)☐ Some * c)☐ None of:
    1.☒ Certified copies of the priority documents have been received.
    2.☐ Certified copies of the priority documents have been received in Application No. _____.
    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO/SB/08)
  Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
  Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

This is in response to application filed on November 26, 2003 in which claims 1 to 12

are presented for examination.

Status of Claims

Claims 1-12 are pending, of which claims 1 and 8 are in independent form.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1-4, and 6-12 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Hamami (US 6,222,820 B1) in view of Lamport et al. (Patent No. 5,138,615).

        Regarding claim 1, Hamami discloses a method comprising the steps of

monitoring the state of a critical up-link (Column 3, lines 55-57: The Operations,

Administration and Maintenance (OAM) F5 end to end cells is used to detect the failure

of the primary path), monitoring the state of an active uplink in the host device (Column

9, lines 44-48: once the primary and redundant connections are established, the end

user or the network edge switch continuously checks the validity of the primary

connection), starting a recovery process in a host device if said active link is in the link-

down state (Column 9, lines 62-65: the entity that detects a failure immediately notifies

the other end user and switches the data traffic from the primary to the redundant

connection). However, Hamami fails to teach that a dependent downlink is set to a link-

down state if critical uplink fails.

In the same field of endeavor, Lamport discloses that a dependent downlink is

considered to have failed if the uplink connection of a network node fails (Lamport,

Column 33, lines 51-59: every host is connected to two switches by distinct links so that

if one of the links or the connecting switch fails, the other link can be activated.

Similarly, every switch is connected to the rest of the network by at least two links such

that the failure of one link will not isolate the host from the rest of the network). Thus, it

would have been obvious to one of ordinary skill in the art at the time of the invention to

apply the failure handling technique disclosed by Lamport into the method of Hamami.

The motivation would have been in providing a faster fault detection and recovery

procedure.

Regarding claim 2, the combination of Hamami and Lamport discloses all the

limitations of claim 1. Additionally, Hamami discloses that specifying the uplink of a

network element being a critical uplink if the failure of said link affects the data flow of a

downlink of said network element (Figure 1: data from source user 1 passes through

switches #1, #6, #5, and #9 to arrive at destination end user 4. Each path between two

switches (for example, link between switch #1 and switch #6) must depend on the next

link (for example, link between switch #6 and switch #5) to function for the data to get

through).

Regarding claim 3, the combination of Hamami and Lamport discloses all the

limitations of claim 1. Additionally, Lamport discloses that the link of a network element

is a dependent downlink if there is a critical uplink between said downlink and the next

network element (Lamport, Figure 3: data, following path P2, moves from host 136 to

host 138 through switch 126 and switch 140. Each downlink (for example, link between

host 136 and switch 126) must depend on the next uplink (for example, link between

switch 126 and switch 140) for the data to pass through).

Regarding claim 4, the combination of Hamami and Lamport discloses all the

limitations of claim 1. Additionally, Hamami discloses that the recovery process

comprises the steps of notifying the host software of the link failure in the active uplink

(Column 9, lines 62-63: the entity that detects a failure immediately notifies the other

end user), and changing the active data path to the redundant uplink (Column 9, lines

63-65: the entity that detects a failure switches the data traffic from the primary to the

redundant connection).

Regarding claim 6, the combination of Hamami and Lamport discloses all the

limitations of claim 4. Additionally, Hamami discloses that the redundant uplink is a

doubling uplink for said active uplink (Column 3, lines 30-35: a primary virtual circuit connection is established from the source end user to the destination end user via a first route, a redundant virtual circuit connection is established from the source end user to the destination end user via a second route, where the second route is redundant to the first route).

Regarding claim 7, the combination of Hamami and Lamport discloses all the limitations of claim 1. Additionally, Hamami discloses that the monitoring of the state of a critical uplink is accomplished by monitoring the quality of the data flow on the link (Column 3, lines 54-56; Column 9, lines 56-57: the Operations, Administration and Maintenance (OAM) F5 end to end cells are used for detecting the failure of the primary path. If the OAM F5 cells are not received, a failure has occurred).

Regarding claim 8, Hamami discloses a method comprises the steps of monitoring the state of a critical up-link (Column 3, lines 55-57: The Operations, Administration and Maintenance (OAM) F5 end to end cells is used to detect the failure of the primary path), starting a recovery process in a host device if said active link is in the link-down state (Column 9, lines 62-65: the entity that detects a failure immediately notifies the other end user and switches the data traffic from the primary to the redundant connection). However, Hamami fails to teach that a dependent downlink is set to a link-down state if critical uplink is detected to have failed.

In the same field of endeavor, Lamport discloses that a dependent downlink is considered to have failed if the uplink connection of a network node fails (Lamport, Column 33, lines 51-59: every host is connected to two switches by distinct links so that if one of the links or the connecting switch fails, the other link can be activated. Similarly, every switch is connected to the rest of the network by at least two links such that the failure of one link will not isolate the host from the rest of the network). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the failure handling technique disclosed by Lamport into the method of Hamami. The motivation would have been in providing a faster fault detection and recovery procedure.

Regarding claim 9, the combination of Hamami and Lamport discloses all the limitation of claim 8. Additionally, Lamport discloses the monitoring device comprises a physical layer device for monitoring the physical state of uplink (Lamport, Column 34, lines 29-32: every switch detects changes in the network), and a media access controller for changing the state of the downlink (Lamport, Figure 18: the process for determining a change in status for a single link of a switch).

Regarding claim 10, the combination of Hamami and Lamport discloses all the limitations of claim 8. Additionally, Hamami discloses that specifying the uplink of a network element being a critical uplink if the failure of said link affects the data flow of a downlink of said network element (Figure 1: data from source user 1 passes through

switches #1, #6, #5, and #9 to arrive at destination end user 4. Each link between two switches (for example, link between switch #1 and switch #6) must depend on the next link (for example, link between switch #6 and switch #5) in the path to function for the data to get through).

Regarding claim 11, the combination of Hamami and Lamport discloses all the limitations of claim 8. Additionally, Lamport discloses that the link of a network element is a dependent downlink if there is a critical uplink between said downlink and the next network element (Lamport, Figure 3: data, following path P2, moves from host 136 to host 138 through switch 126 and switch 140. Each downlink (for example, link between host 136 and switch 126) must depend on the next uplink (for example, link between switch 126 and switch 140) for the data to pass through).

Regarding claim 12, the combination of Hamami and Lamport discloses all the limitations of claim 8. Additionally, Lamport discloses that the monitoring device is an Ethernet controller (Lamport, Column 8, lines 57-61: the switches and hosts monitor the states of links in the Ethernet network).

Allowable Subject Matter

3.   Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4.   The following is a statement of reasons for the indication of allowable subject

matter:

Regarding claim 5, the prior arts include a recovery process comprising the steps

of notifying the host of an active uplink failure and checking the status of the redundant

uplink. However, they fail to teach that the host will be set to a predetermined default

mode when the redundant uplink is also in a failure state.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Juvena W. Loo whose telephone number is (571) 270-

1974. The examiner can normally be reached on Mon.-Thurs : 7:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Frantz Coby can be reached on (571) 272-4017. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Juvena W Loo
Examiner
Art Unit 2609

FRANTZ COBY
PRIMARY EXAMINER